

Treatment of herpes zoster with botanical interventions

Case report

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Abstract

Introduction: Herpes zoster or shingles is a viral infection caused by the reactivation of the varicella-zoster virus which lays dormant in the ganglia after a primary infection with varicella, most commonly known as chickenpox. Approximately 1 in 3 people in the United States will develop shingles in their lifetime.

Patient concerns and diagnosis: A 26-year-old Caucasian female presented with a diagnosis of herpes zoster with small lesions on her mid-right abdomen and large weeping lesions on her mid-left abdomen and back with physical complaints of severe burning, pain and itching.

Interventions: An alternative, botanical based topical therapy was used in this case including extracts of *Melissa officinalis*, *Hypericum perforatum*, *Eleutherococcus senticosus*, *Lavandula officinalis*, *Glycyrrhiza glabra* and *Sarracenia spp.* prepared in a Versabase gel preparation.

Outcomes: Notably during the first few days of topical treatment, substantial improvement was observed regarding lesion size, lesion number and pain level.

Conclusions: This case demonstrates the potential efficacy of a topical botanical formulation for the treatment of an active herpes zoster outbreak.

Abbreviations: IRB = Institutional Review Board, VZV = varicella-zoster virus.

Keywords: acyclovir, botanical herbs, herpes zoster, naturopathic medicine, varicella-zoster virus

1. Introduction

Herpes zoster or shingles, is a viral infection caused by the reactivation of the varicella-zoster virus (VZV) which lays dormant in the ganglia after a primary infection of varicella, most commonly known as chickenpox.^[1] This virus can theoretically affect 99.5% of people in the United States who have previously been infected with varicella virus, but most often reactivates in

individuals over the age of 40.^[1] The virus tends to affect the older population due to immune deterioration and the inability to fight off viral infections. Approximately 1 in 3 people in the United States will develop shingles in their lifetime.^[1] Typical untreated healing time of herpes zoster symptoms is approximately 30 days, although symptoms may last for weeks, months or even longer. More severe symptoms often associated with

The patient in this case provided verbal consent for the publication of the case details in accordance to the Declaration of Helsinki. This non-written consent was formally documented and witnessed.

Support for this project was provided by internal funding from the Southwest College of Naturopathic Medicine.

Conflict of Interest: The authors confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome. The authors are not members of the editorial board for this journal.

No additional information is supplied as a supplementary file. Additional questions or information may be obtained by contact the Corresponding author, Jeffrey Langland.

Institutional Review Board (IRB) approval was waived for this study. After discussion with the Southwest College of Naturopathic Medicine IRB committee it was concluded that since this is study is a case report which represents a medical/educational activity that does not meet the DHHS definition of research, it was deemed unnecessary to be reviewed by the IRB.

The authors have no conflicts of interest to disclose.

The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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How to cite this article: Ferreira V, Langland J. Treatment of herpes zoster with botanical interventions: case report. Med Case Rep Study Protoc 2021;2:1(e0058).

Received: 2 December 2020 / Received in final form: 7 December 2020 / Accepted: 11 December 2020

<http://dx.doi.org/10.1097/MD9.0000000000000058>

herpes zoster include postherpetic neuralgia, which leads to persistent stabbing and burning pain for 3 or more months after complete healing of the lesions.^[2] This pain occurs along the previously shingles-affected dermatome without the development of a rash. Conventional medicine most commonly uses anti-viral pharmaceuticals such as oral acyclovir and narcotic analgesics, such as oxycodone, for treatment of the virus and pain relief, respectively. Acyclovir and related compounds, including valacyclovir and famcyclovir, act by competitive inhibition of the viral deoxyribonucleic acid polymerase followed by incorporation into and termination of the growing viral deoxyribonucleic acid chain. Naturopathic medicine has had repeated success in treating VZV with the use of botanicals with antiviral, anti-inflammatory, analgesic and vulnerary properties. Historical use of *Melissa officinalis*,^[3,4] *Hypericum perforatum*,^[5-7] *Eleutherococcus senticosus*,^[8] *Glycyrrhiza glabra*,^[9,10] *Lavandula officinalis*^[11] and *Sarracenia purpurea*^[11-14] have purported anti-viral properties making them putative efficacious herbs for use against VZV. Some of these herbs have other actions as well that may aid in the healing process of herpes zoster infections such as *Hypericum perforatum* with vulnerary actions, *Glycyrrhiza glabra* with anti-inflammatory properties, and *Sarracenia purpurea* with analgesic constituents. Significantly, constituents of *Sarracenia purpurea* have been used for relieving pain in the neck, back and other body locations.^[12,13] Studies have also shown allantoin^[15] and glycerin, which are present in the formulation used in this study, to have wound healing properties and therefore may improve VZV-associated symptoms as well.^[15] The following case presents the efficacy of a commercially available topical herbal formulation containing the constituents listed above in the successful treatment of an active herpes zoster outbreak.

2. Case presentation

A 26-year-old Caucasian female presented with a diagnosis of herpes zoster with small lesions on her mid-right abdomen and large weeping lesions on her mid-left abdomen and back (Fig. 1). The patient complained of severe burning, pain and itching, which she reported as a 9/10 (10 being the worst) (Fig. 2). Her primary care physician prescribed acyclovir, neurontin and codeine, but she declined treatment because she was interested in seeking naturopathic alternatives. Following a subsequent medical exam, the patient was prescribed a commercially available botanical formulation (Aviratek Biomedical Solutions) of ethanol and/or glycerin extracted *Hypericum perforatum* (2.5%), *Lavandula officinalis* (10%), *Glycyrrhiza glabra* (2.5%), *Melissa officinalis* (6%), *Eleutherococcus senticosus* (4%) and mixed species of *Sarracenia* (25%) suspended in a Versabase gel (50%). The Versabase gel was composed of allantoin, aloe vera, ammonium acryloyldimethyltaurate, ethylenediaminetetraacetic acid and methylchloroisothiazolinone. The patient was asked to document her pain and photograph the affected area to monitor her progress. Instructions for application of the topical gel were to wash the area with warm water only (no soap) and pat dry, then begin at the outer edge of the affected area and apply a very thin layer of gel to cover all the lesions. The entire area was then covered with a Teflon coated bandage. The gel was to be reapplied 4 times daily with repeated application and covering instructions including rewashing the area prior to bedtime and as well in the morning. The physician recommended no other adjunct medications or supplementations for the patient during the treatment period. The treatment protocol was continued for a period of 14-days.

The patient was able to completely follow the recommended protocol and gave reports on days 1, 2, 3, 6, 9 and 14. A

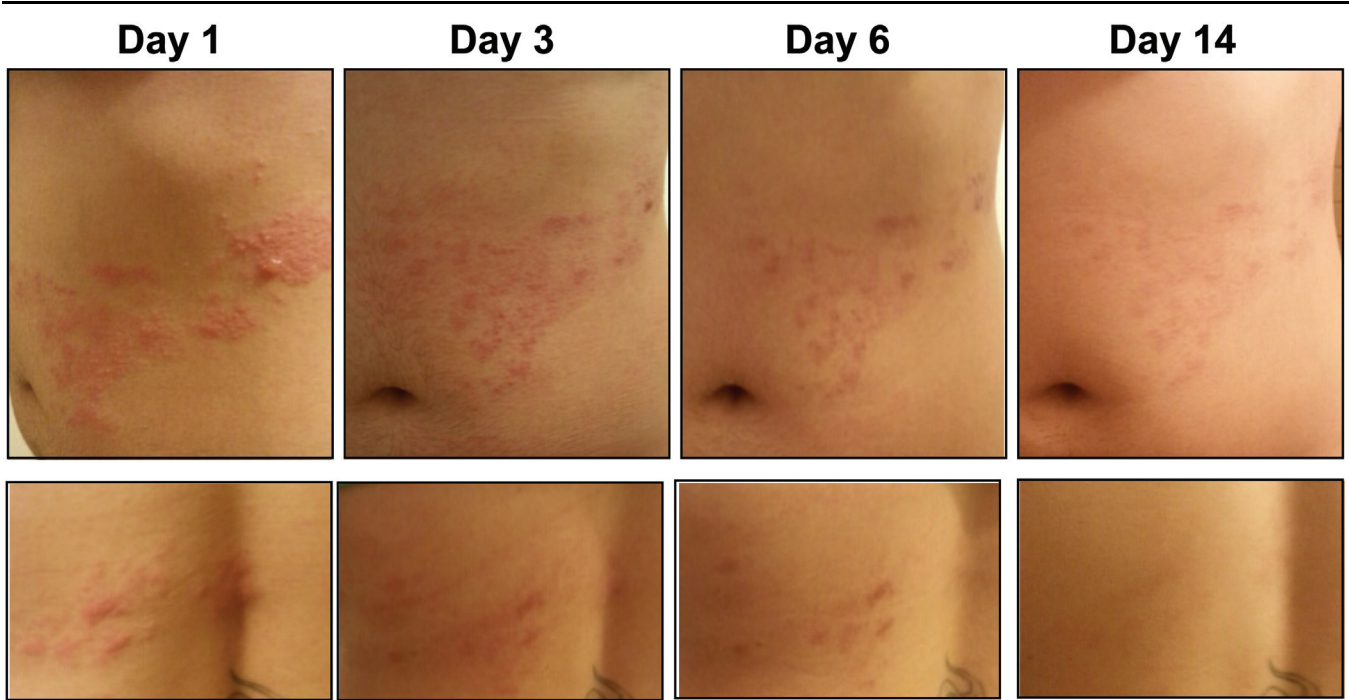


Figure 1. Photographic progress of the patient’s zoster lesions. Photographs of the zoster-associated lesions on the mid-left abdomen (top panels) and the mid-right abdomen (bottom panels) collected on days 1, 3, 6, and 14.

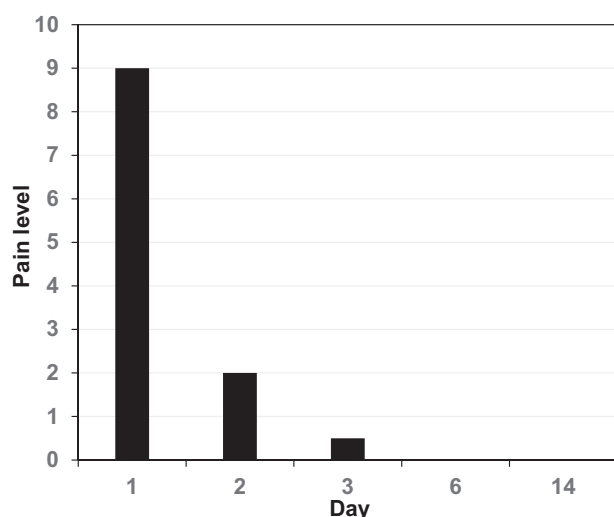


Figure 2. Patient severity of pain. Bar graph demonstrating the patient's pain level on days 1, 2, 3, 6, and 14. Pain scale ranged from 0–10, with 10 being the most severe.

numerical rating scale (NRS) ranging from 0–10, with 10 being the most severe, was used to assess the pain level. Figure 1 demonstrates the visual improvement of the herpes zoster lesions on the mid-left abdomen (top panels) and the mid-left back (bottom panels) throughout the protocol, and Figure 2 shows the improvement in pain levels and sensitivity. Dramatically, the majority of improvement in both lesion severity and pain was observed from day 1 to day 3. The lesions started out as extremely painful, large fluid-filled vesicles, and by day 3, a significant visual decrease in fluid extrusion from the blisters was observed and the vesicles were no longer raised. By day 3 of treatment, the lesions only showed signs of erythema and were beginning to form crusts. In addition, between days 1, 2, and 3, the patient reported her pain level went from 9/10 to 2/10, to less than 1/10, respectively. The patient also reported that the itching was completely resolved by day 3. From day 3 to day 6, the lesions became completely dried and crusted with her pain being completely resolved. By day 9 all of the lesions were healed, with minor erythema still visible. By day 14, the patient reported feeling completely well again with very slight redness from where the initial larger lesions were located.

3. Discussion

This case demonstrates the effectiveness of a naturopathic approach for the treatment of an outbreak of herpes zoster using a topical antiviral/analgesic botanical treatment. A typical, untreated herpes zoster outbreak frequently takes a minimum of 30 days to fully resolve. In many instances, resolution may take much longer. The common timeline for shingles is a 2 to 3 day prodromal phase, followed by 3 to 4 days for the rash to form into vesicles or blisters.^[9] Fluid inside the blisters is initially clear, but may become cloudy after 3 to 4 days. After another 5 days, the blisters begin erupting, secreting fluid and subsequently drying out and forming a crust. Complete healing typically takes another 2 to 4 weeks.^[2] Oral acyclovir, or related compounds, are the most common first line of treatment for a herpes zoster outbreak, but it has often been proven only moderately effective in clinical settings. A clinical study demonstrated that acyclovir dosed at 800 mg, 5 times daily for 7 to 10 days had no statistically

significant effect on acute pain after 1 month.^[16] Acyclovir did show a decrease in overall healing time of herpes zoster when compared to a placebo, but only by 1 to 2 days.^[16] Another study done on valacyclovir versus acyclovir showed that valacyclovir healed the rash by day 15 with complete healing by day 22 which was better than acyclovir's healing time of 29 days, but still demonstrating only moderate efficacy.^[17] As shown in this case study, the botanical herbal formulation used to treat herpes zoster resulted in the fluid-filled vesicles crusting over by day 3 and complete healing by day 14, which is at least a 50% decrease in healing time compared to acyclovir.

Pain is 1 of the most debilitating factors about a herpes zoster outbreak and with acyclovir and valacyclovir treatments alone, pain is typically not fully relieved until days 14 to 29.^[17] Oxycodone is the most common conventional treatment for the neuralgia associated with a herpes zoster outbreak. It is an oral opioid pain medication prescribed to help decrease the symptoms of pain associated with shingles, but has several adverse side effects including constipation, nausea, vomiting, headaches, fatigue and itchiness. Studies with oxycodone report a moderate reduction in pain in only about 50% of shingles patients and the medication is often discontinued due to severe constipation.^[8] Therefore, conventional approaches have, at best, limited success with reducing pain in patients afflicted with shingles. In the presented case, the antiviral/analgesic botanical formulation (*Hypericum perforatum* (2.5%), *Lavandula officinalis* (10%), *Glycyrrhiza glabra* (2.5%), *Melissa officinalis* (6%), *Eleutherococcus senticosus* (4%) and mixed species of *Sarracenia* (25%) suspended in a Versabase gel (50%)) resulted in a drastic decrease in pain by day 2 and complete pain relief between days 3 to 6. Much of this analgesic effect is likely associated with the *Sarracenia spp.*, which has a long history of pain relief and use as an anesthetic.^[11]

Acyclovir, like many pharmaceutical-grade treatments, have common, as well as serious, side effects associated with their use. Acyclovir most commonly causes a general ill feeling, nausea or vomiting, diarrhea and headaches, and more concerning side effects like seizures, hallucinations, and possible signs of an allergic reaction. Notably, the topical botanical formulation used in this case study presented no adverse reactions when used on the patient during the treatment protocol. This may support the use of these anti-viral/analgesic herbs for topical application on immunocompromised patients infected with VZV, who are 1 of the largest populations affected by herpes zoster. With acyclovir being so commonly used to treat VZV, there are numerous studies that illustrate the frequent development of drug-resistant herpes viruses in clinical settings, particularly in immunocompromised patients. When using a mono-therapy, like acyclovir, a virus is often more likely to gain resistance as compared to a combination therapy,^[18,19] such as a multi-herbal formulation, since numerous different constituents are present to inhibit viral replication.

This case study used research-based, historical anti-viral/analgesic botanicals in the efficacious treatment of herpes zoster in a clinical setting. This botanical formulation has previously been reported to have efficacy for the treatment of herpes simplex virus-1 associated herpes labialis, supporting the use of these botanicals against other members of the herpes virus family.^[20] This case demonstrates a significant and rapid decrease in pain and lesion severity when compared to the conventional first line therapy of acyclovir. In conclusion, the anti-viral/analgesic commercially available botanical formulation described in this study showed significant efficacy related to overall healing and decreased pain of a herpes zoster outbreak. This case study

provides support that an alternative botanical protocol may represent a more efficacious treatment of varicella-zoster virus leading to the development of shingles.

Acknowledgments

Southwest College of Naturopathic Medicine and the Ric Scalzo Institute for Botanical Research and the Research Department

Author contributions

AF and JL supervised the study. VF wrote the manuscript. JL edited the manuscript. JL was the principal investigator.

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